

7(3), 5(4), 24(7)

S07/48-23-10-19/39

AUTHORS: Stepanov, B. I., Zhibankov, R. G., Yermolenko, I. N.

TITLE: Infrared Spectra of Cellulose and of Its Derivatives

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959  
Vol 23, Nr 10, pp 1222-1223 (USSR)

ABSTRACT: It is pointed out in the introduction that cellulose as a fiber could be investigated only inadequately, because light dispersion presents a considerable obstacle in infrared spectroscopic investigations. Attempts made to avoid this obstacle by dissolving the fiber, or by embedding it in an immersion medium, or even by regenerating cellulose to cellophane gave entirely unsatisfactory results which did not show the true cellulose spectrum. Thus, the authors endeavored to press cellulose fibers without any addition, and they investigated the spectrum of these pressed cellulose samples within the range of from 2.5 to 15 $\mu$ . In the spectra of native celluloses bands were found in the following ranges: 3330, 2940, 1650, 1428, 1360, 1340, 1325, 1290, 1225, 1190, 1150-910 and 705  $\text{cm}^{-1}$ . The former is to be attributed to the OH-valence vibrations. In the spectra of oxidized celluloses an intense

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# Infrared Spectra of Cellulose and of Its Derivatives

band was found at  $1740\text{ cm}^{-1}$  (O=O). An increase of the degree of oxidation attenuated the intensity of the bands  $1430$ ,  $1360$ ,  $1340$ , and  $1325\text{ cm}^{-1}$  and increased the intensity of the band in the range of  $1280$ - $1160\text{ cm}^{-1}$ . Further details are discussed in this connection. A nitration resulted in the occurrence of the bands  $1290$ ,  $1390$ , and  $1200\text{ cm}^{-1}$ . The spectrum of dialdehyde cellulose was characterized by absorption in the range of  $900\text{ cm}^{-1}$ . A cellulose with many carboxyl groups showed a weak band at  $955\text{ cm}^{-1}$ , mercerized cellulose showed increased absorption in the range of  $910\text{ cm}^{-1}$ , etc. In conclusion, the great importance of cellulose infrared spectroscopy is pointed out.

ASSOCIATION: Institut fiziki i matematiki Akademii nauk BSSR (Institute of Physics and Mathematics of the Academy of Sciences of the Belorussian SSR)

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5(4)

**AUTHORS:**

Yermolenko, I. N., Zhabankov, R. G.

SOV/76-33-6-5/44

**TITLE:**

Investigation of the Cation Exchange on Oxidized Cellulose by the Method of Infrared Spectroscopy (Issledeniya kationsobmena na oksislennykh tsellyulozakh metodom infrakrasnoy spektroskopii)

**PERIODICAL:**

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 6, pp 1191-1197 (USSR)

**ABSTRACT:**

The exchange of hydrogen of the carboxyl group of oxidized cellulose with the cations Li, Be, Na, Mg, Al, Ca, Cr, Mn, Fe, Co, Ni, Cu, Ag, Cd, Cs, Ba, Pb,  $\text{VO}_2$ ,  $\text{NH}_4$ , is investigated by the aid of infrared spectroscopy. Cellulose samples, prepared at the Institut organicheskoy khimii AN SSSR (Institute of Organic Chemistry of the AS USSR) by Professor V. I. Ivanov, were utilized among other materials. The absorption spectra of the products were obtained with an IKS-11 spectrometer. It was found that the displacement of the C=O absorption band of the carboxyl groups in the case of sorption of the cations on the oxidized cellulose (in consequence of the above mentioned exchange and of the formation of corresponding salts of the oxidized cellulose) does not depend on the carboxyl group content; however, it increases proportionally with the cation mass. The presence of carbonyl groups does not exercise any influence on

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**Investigation of the Cation Exchange on Oxidized Cellulose  
by the Method of Infrared Spectroscopy**

BNV/76-33-6-5/44

this effect. In the course of ion exchange an increase is observed in the intensity of the displaced C=O band of the carboxyl group, in which connection the band of wavelength 5.75 $\mu$  becomes weaker. The share of cations in the exchange equilibrium in the polymer phase depends on the character of the cation, the composition of the altered cellulose, the concentration, and the pH of the solution. A quantitative determination of the carboxyl groups in oxidized cellulose, based only on the magnitude of absorption in the wavelength range of 5.8 $\mu$ , is found to be unreliable. Finally, gratitude is expressed to Professor B. I. Stepanov and Professor V. I. Ivanov. There are 8 figures and 26 references, 11 of which are Soviet.

**ASSOCIATION:** Akademiya nauk BSSR Institut fiziki i matematiki. Belorusskiy gosudarstvennyy universitet (Academy of Sciences Belorussiya, Institute of Physics and Mathematics. Belorussian State University)

**SUBMITTED:** April 12, 1957

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**Sponsoring Agency: Andersen's Bank & Trust Co. Inc. 11111**

General Ed.: N. A. Borlavich; Ed.: I. Timofeyev; Tech. Ed.:  
N. Shtarko.

**REMARK:** This collection of articles is intended for chemists and physicists interested in molecular dynamics, and for scientists generally concerned with applications of this and related phenomena in research in the life sciences.

CONTENTS: A collection of twelve papers read at the 12th Annual Meeting of the American Chemical Society, held at the Waldorf-Astoria Hotel, New York, N. Y., on September 10-12, 1939. The papers are arranged in alphabetical order of the authors. The subjects of the papers are: (1) The determination of the structure of the active site of the enzyme, (2) The determination of the structure of the active site of the enzyme, (3) The determination of the structure of the active site of the enzyme, (4) The determination of the structure of the active site of the enzyme, (5) The determination of the structure of the active site of the enzyme, (6) The determination of the structure of the active site of the enzyme, (7) The determination of the structure of the active site of the enzyme, (8) The determination of the structure of the active site of the enzyme, (9) The determination of the structure of the active site of the enzyme, (10) The determination of the structure of the active site of the enzyme, (11) The determination of the structure of the active site of the enzyme, (12) The determination of the structure of the active site of the enzyme.

**of Industrial, Inc., E. A. Testing the Fluorescence Properties of  
Thiostyryl Isocyanate**

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Probsthain, A. A. [All-Tonon Scientific Research Institute of Classical Research], Dye for Fluorescence Microscopy

2

Matyev, V. K. [Excellent organobenzoyl-based laser  
H. D. Zaitseva as editor (Institute of Organic Chemistry named  
N. D. Zelinsky AS USSR)]. Preparation and Applications of  
Orange-Red II  $\alpha$ -( $\alpha$ -Diaminobenzoyl)idams)-2-Thienyl-  
Carbonyl-5-Lactams

3

The author reports on his synthesis of an organic luminescence polymer. The polymer exhibits an orange-red luminescence after exposure to ultraviolet light. The new luminescence has made it possible to use luminescence in electroluminescent and electronic vacuum-tube technology for the detection of leaks in the walls of glass products, and in, for example, striping and more sensitive than the standard methods of seal inspection. *Chemical Abstracts*, 1966, 66, 123466d. (See also 66, 123467d.)

**123466d** Photoluminescence of Luminescent Polymers and With Luminescent and Photoluminescent Additives. The authors discuss a further application of luminescence, that is, a method using seal gels with a luminescent substance to study seal defects during hydrostatic dam construction work. The authors claim that this method has come into wide use in the USSR and other countries in recent years. *J. Appl. Polym. Sci.*, 1966, 10, 1191-1194, 11 figs., 12 refs.

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Popovits, H. S., Ye. A. Galitskii, E. A. Serzhitska, and  
M. V. Silitskii [Institute for Graduate Studies, Israel  
U. V. Lomonosov (Moscow State University) Inst.  
M. V. Lomonosov)]. Utilization of Ultraviolet Rays in  
Paper Chromatography

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**Termondo, A. A. B., M. F. Facilio, and L. P. Glaser.**  
**Interact Effect of BSA (Institute of Physics AS Bolson) ]**  
**Effect of Adsorbed Water on the Humectance of Cellulose**  
**Materials**

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8/058/61/000/009/015/050  
A001/A101

**AUTHORS:** Yermolenko, I.N., Gavrilov, M.Z., Gladchenko, L.F.

**TITLE:** Effect of adsorbed water on luminescence of cellulose materials

**PERIODICAL:** Referativnyy zhurnal. Fizika, no. 9, 1961, 101, abstract 9V204 (V sb. "Metody lyuminestsentn. analiza", Minsk, AN BSSR, 1960, 83-86)

**TEXT:** It was discovered that adsorption of water, especially at low vapor pressure, reduces the intensity of fluorescence of rhodamine 6X(6Zh) adsorbed on cellulose. At transition to capillary condensation of water the further intensity drop is insignificant. The authors propose to utilize the phenomenon discovered for developing a method of checking the content of adsorbed water in cellulose during its drying. Besides rhodamine other luminescent dyestuffs (auramine, tryptaflavine) can be used for this purpose.

A. Shablya

[Abstracter's note: Complete translation]

Card 1/1

KUTANOV, I.P. [Kutanau, I.P.]; YARMOLENKO, I.N. [Iarmolenka, I.N.]

Comparative study of the adsorption of activated carbons. Vestsi  
AN BSSR. Ser.fiz.-tekhn. no.3:41-44 '60. (MIRA 13:9)  
(Carbon, Activated)

YERMOLENKO, I.N.; KAPUTSKIY, P.N.; PAVLYUCHENKO, M.M.

Effect of the moisture content and the composition of the oxidant on the oxidation of cellulose by nitrogen oxides. Dokl. AN BSSR 4 no.10: 417-420 '60. (MIRA 13:9)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.  
(Nitrogen oxides) (Oxidation)

S/190/60/002/012/008/019  
B017/B055

**AUTHORS:** Katibnikov, M. A., Yermolenko, I. N., Somova, A. I.,  
Yefremova, O. G., Glikman, S. A.

**TITLE:** Spectroscopic Study of Cellulose Ethers. I. On the  
Applicability of Spectroscopic Methods for Characterizing  
the Photochemical Reactions of Ethyl Cellulose

**PERIODICAL:** Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 12,  
pp. 1805-1810

**TEXT:** The ultraviolet, infrared and luminescence spectra of ethyl cellulose preparations with varying carboxyl content were investigated. Ultraviolet irradiation of ethyl cellulose was found to change the luminescence spectra and intensities. These changes are particularly marked at the beginning of irradiation, thus permitting the first stages of degradation of the ethyl cellulose chains to be determined. It is shown that the sensitivity to light increases with the carboxyl content of ethyl cellulose. Neutralization of the carboxyl groups by Pb- and Na ions increases the light stability of the compounds. It is assumed that the presence

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Spectroscopic Study of Cellulose Ethers.

S/190/60/002/012/008/019

B017/B055

I. On the Applicability of Spectroscopic Methods for Characterizing the Photochemical Reactions of Ethyl Cellulose

of carboxyl groups in ethyl cellulose compounds accelerates the photochemical reactions initiated by ultraviolet light. This is in agreement with a previously expressed assumption that the carboxyl groups play an essential role in the thermooxidative degradation of ethyl cellulose. The ultraviolet absorption spectra of ethyl cellulose preparations in the 210 - 400 mμ region are given in Fig. 1. Fig. 2 shows the infrared absorption spectra of ethyl cellulose preparations, run on the VKC-14 (IKS-14) spectrometer. The luminescence spectra of these preparations are given in Fig. 3. The intensity of the luminescence of ethyl cellulose preparations after ultraviolet irradiation at 420 and 470 mμ is represented in Fig. 4. The luminescence spectra of preparations treated with  $Pb(NO_3)_2$  and NaOH are shown in Figs. 5 and 6. Luminescence was excited by a Hg quartz lamp type CBQW-250 (SVDSH-250), spectra being taken by means of a YM-2 (UM-2) monochromator and ФЭУ-17 (FEU-17) photomultiplier, and recorded by РЭП-09 (EPP-09) potentiometer. There are 6 figures and 17 references: 10 Soviet, 5 US, 1 German, and 1 French.

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Spectroscopic Study of Cellulose Ethers.

S/190/60/002/012/008/019

I. On the Applicability of Spectroscopic

B017/B055

Methods for Characterizing the Photochemical Reactions of Ethyl Cellulose

ASSOCIATION: Saratovskiy gosudarstvennyy universitet im. N. G.  
Chernyshevskogo (Saratov State University imeni N. G.  
Chernyshevskiy). Institut obshchey i neorganicheskoy khimii  
AN BSSR (Institute of General and Inorganic Chemistry of the  
Academy of Sciences BSSR)

SUBMITTED: May 19, 1960

Card 3/3

YERMOLENKO, I.M. [Iarmolenka, I.M.]; ZHBANKOV, R.G. [Zhbankou, R.H.];  
ROZENBERG, A.Ya.

Effect of pH on the sorption of iron from solutions by cellulose  
preparations which replace the carboxyl groups. Vesti AN BSSR.  
Ser.fiz.-tekh.nav. no.3:25-28 '60. (MIRA 13:9)  
(Iron) (Cellulose) (Sorption)

YERMOLENKO, I. N.

307/9384

PHASE I BOOK EXPLOITATION

International symposium on macromolecular chemistry. Moscow, 1960.

Mezhdunarodnyy simpozium po makromolekulyarnoy khimii SSSR, Moskva, 14-18 iyunya 1960 g.; doklady i atzerferaty. Seriya III. (International Symposium on Macromolecular Chemistry Held in Moscow, June 14-18, 1960; Papers and Abstracts) Section III. [Moscow, Izd-vo AN SSSR, 1960] 489 p. 35,000 copies printed.

Tech. Ed.: P. S. Kashina.

Sponsoring Agency: The International Union of Pure and Applied Chemistry. Commission on Macromolecular Chemistry.

REMARKS: This book is intended for chemists interested in polymerization reactions and the synthesis of high molecular compounds.

CONTENTS: This is Section III of a multivolume work containing papers on macromolecular chemistry. The articles in general deal with the kinetics of polymerization reactions, the synthesis of special-purpose polymers, e.g., ion exchange resins, semiconductor materials, etc., methods of altering polymerization reactions, properties and chemical interactions of high molecular materials, and the effects of various factors on polymerization and the degradation of high molecular compounds. No personalities are mentioned. References given follow the articles.

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YERMOLENKO, I.N.; KAPUTSKIY, F.N.

Use of nitrogen oxides in the synthesis of modified cellulose.  
Vynokom. seed. 2 no.4:626 Ap '60. (MIRA 13:11)  
(Cellulose) (Nitrogen oxide)

PAVLYUCHENKO, M.M.; YEMOLENKO, I.N.; KAFUTSKIY, P.N.

Mechanism of the oxidation of cellulose by nitrogen dioxide. Zhur.  
prikl. khim. 33 no.6:1385-1391 Je '60. (MIRA 13:8)

(Nitrogen oxide) (Cellulose)  
(Oxidation)

IVANOV, V.I.; YERMOLYENKO, I.N.; GUSEV, S.S.; LESHINA, N.Ya.; IVANOVA, V.S.

Study of dialdehyde celluloses by means of infrared spectra. Izv.  
AN SSSR. Otd. khim. nauk no. 12:2249-2252 D '60. (MIRA 13:12)

1. Institut organicheskoy khimii im. M.D. Zelinskogo AN SSSR.  
(Cellulose—Spectra)

KATIBNIKOV, M.A.; YERMOLENKO, I.N.; SOMOVA, A.I.; YEFREMOVA, O.G.;  
GLIKMAN, S.A.

Spectroscopic study of cellulose ethers. Part 1: Applicability  
of spectral methods to the characterization of photochemical  
conversions in ethylcellulose. Vysokom. soed. 2 no. 12:1805-  
1810 D '60. (MIRA 14:1)

1. Saratovskiy gosudarstvennyy universitet im. N.G. Chernyshev-  
skogo; Institut obshchey i neorganicheskoy khimii AN BSSR.  
(Cellulose—Spectra)

YEREMENKO, I.N.; GAVRILOV, M.Z.; GLADCHENKO, L.F.

Applying the luminescent method of studying the sorption of water by celluloses to characterize their structure. Trudy LTA no.91:83-87 '60. (MIRA 15:12)

1. Institut fiziki AN BSSR.  
(Cellulose) (Sorption) (Fluorescence)

YERMOLENKO, I.N.; KATIBNIKOV, M.A; SOMOVA, A.I.

Spectroscopic study of cellulose ethers. Part 2: Thermal and light stability of carboxyethylcellulose. *Vysokom. soed.* 3 no.1:30-32 Ja '61.

1. Saratovskiy gosudarstvennyy universitet im.N.G.Chernyshevskogo i Institut otshchey i neorganicheskoy khimii AN BSSR.  
(Cellulose)

KATIDNIKOV, M.A.; ~~VERMOLENKO, I.M.~~

Absorption and luminescence spectra of the interaction of poly-electrolytes with dyes in solutions. Part 1: Study of aqueous solutions of rhodamine 6G in the presence of polymethacrylic acid. Vysokom. soed. 3 no.1:105-112 Ja '61. (MIRA 14:2)

1. Institut obshchey i neorganicheskoy khimii AN SSSR.  
(Rhodamine) (Methacrylic acid)

GUSEV, S.S.; SUN' TUN [Sun T'ung]; YERMOLENKO, I.N.; ROGOVIN, Z.A.

Infrared spectroscopy study of the structure of cellulose esters of aliphatic amino acids and of cellulose-polyamide graft copolymers. Vysokom.sosd. 3 no.11:1684-1687 N '61.  
(MIRA 14:11)

1. Moskovskiy tekstil'nyy institut i Institut obshchey i neorganicheskoy khimii AN BSSR.

(Cellulose esters--Spectra)

(Amino acids)

(Polymers)

SUN, TUN [Sun T'ung]; GUSEV, S.S.; YERMOLENKO, I.N.; ROGOVIN, Z.A.

Infrared spectroscopy study of the structure of cellulose esters  
of aromatic amino acids and cellulose-acrylonitrile graft  
copolymers. Vysokom.sped. 3 no.11:1688-1691 N '61. (MIRA 14:11)

1. Moskovskiy tekstil'nyy institut i Institut o'bozhey i  
neorganicheskoy khimii AN BSSR.

(Cellulose esters—Spectra)

(Amino acids)

(Acrylonitrile polymers)

KAPITSKIY, F.N.; PAVLYUCHENKO, M.M.; YERMOLENKO, I.N.

Effect of nitrogen trioxide, moisture, and phosphoric acid  
on the reaction of cellulose with nitrogen peroxide. Vysokom.  
soed. 4 no.4:503-509 Ap '62. (MIRA 15:5)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.  
(Cellulose) (Nitrogen oxides) (Phosphoric acid)

L 12358-63

EXP(q)/EXT(n)/BDS AFFTC/ASD JD  
S/081/63/030/005/016/075

54

AUTHOR: Yermolenko, I. N., Gavrilov, M. Z. and Longin, M. L.

TITLE: A new analytical method for traces of metals

PERIODICAL: Referativnyy zhurnal, Khimiya, no. 5, 1963, 13, abstract 5030  
(Prom-st' Belorussii, 1962, no. 8 (51), 5-7)

TEXT: A submicroanalytical methodology has been developed for determining metals on the basis of combinations of advantages which are achieved by application

"APPROVED FOR RELEASE: 03/20/2001

CIA-RDP86-00513R001962820004-9

[Abstractor's note: Complete translation]

Card 1/1

APPROVED FOR RELEASE: 03/20/2001

CIA-RDP86-00513R001962820004-9"

REZNIKOV, M.Ya. [Reznikau, M.IA.]; KAPUTSKIY, F.N. [Kaputski, F.M.];  
YERMOLENKO, I.N., [Iarmolenka, I.M.]

Electric conductivity and the degree of swelling of oxidized  
cellulose salts. Vestsi AN BSSR. Ser. fiz.-tekh. nav.  
no.3.39-45 '62. (MIRA 18:3)

YERMOLENKO, I.N.; LONGIN, M.L.; GAVRILOV, M.Z.

Quantitative determination of nickel and manganese traces  
by the diffusion reflection spectra with a preliminary  
concentration on a cellulose ion exchanger. Zhur.anal.khim.  
17 no.9:1035-1039 D '62. (MIRA 16:2)

1. Institute of General and Inorganic Chemistry and Sect. of  
Gerontology, Academy of Sciences, B.S.S.R., Minsk.  
(Nickel--Analysis) (Manganese--Analysis)  
(Spectrum analysis)

S/069/62/024/003/006  
B110/B138

AUTHORS: Gusev, S. S., Yermolenko, I. N.

TITLE: Application of infrared spectroscopy to the study of  $\text{UO}_2^{2+}$   
sorption of cellulose materials

PERIODICAL: Kolloidnyy zhurnal, v. 24, no. 3, 1962, 278 - 282

TEXT: The IR absorption spectra of the  $\text{UO}_2^{2+}$  ion sorption products were studied with cellulose material containing carboxyl. Dialdehyde, dicarboxyl, monocarboxyl, and carboxyl methyl celluloses ( $\gamma = 78\%$ ) treated for 25 min with 0.1 N solutions of uranyl acetate and uranyl nitrate were examined.

Results: (1) Absorption bands at  $2500 - 3500 \text{ cm}^{-1}$  corresponding to CH and OH groups. (2) Changes at  $1700 - 1500 \text{ cm}^{-1}$  in connection with carboxyl group ionization (shift of the CO stretching vibrations from  $1730 \text{ cm}^{-1}$  into the low frequency region). (3) Antisymmetric vibrations of carboxylate at  $1575 \text{ cm}^{-1}$  for uranyl salts of oxidized celluloses and at  $1610 \text{ cm}^{-1}$  for Na  
Card 1/3

S/069/62/024/003/003/006  
B110/B136

Application of infrared ...

salts of carboxy-methyl celluloses. (4) Typical polysaccharide absorption bands at  $1200 - 1000 \text{ cm}^{-1}$ . (5) Intensive absorption bands of the uranyl ion at  $940 \text{ cm}^{-1}$ . This band, which corresponds to the structure of the multivalent ion, is applied to determine: (1) the total content of sorbed ion; (2) the nature of the reaction with polymer structure. Changes at  $1570 - 1610$  and  $940 \text{ cm}^{-1}$  occurring in the spectrum of Na-carboxy-methyl cellulose (Na-CMC) treated with uranyl nitrate prove the transition from Na-CMC to  $\text{UO}_2\text{-CMC}$ . Bridge bonds of the multivalent cation with carboxyl groups impede cation diffusion into the polymer and reduce the originally high rate of exchange. A similar situation occurs with dicarboxyl cellulose. The equilibrium sorption depends on the initial carboxyl groups and on the pH of the solutions. The ion exchange character of  $\text{UO}_2$  sorption is proven by the change of the absorption of carboxylate groups and of the  $\text{UO}_2$  ion being proportional to the degree of oxidation. In uranyl salts, the molar absorption coefficient of antisymmetric vibrations and vibrations of the CO of carboxylate groups depend not on the cellulose type, but on

Card 2/3

Application of infrared ...

S/069/62/024/003/003/006  
B110/B138

carboxylated celluloses. There are 4 figures.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN BSSR, Minsk  
(Institute of General and Inorganic Chemistry AS BSSR, Minsk)

SUBMITTED: May 24, 1961

Card 3/3

ZOSIM, Z. L.; YERMOLENKO, I. N.; GAVRILOV, M. Z.

Spectroscopic methods of investigating the thermal degradation  
of woodpulp materials. Ukr. khim. zhur. 28 no.6:729-731 '62.  
(MIRA 15:10)

1. Ukrainskiy nauchno-issledovatel'skiy institut tsellyuloznoy i  
bumazhnoy promyshlennosti i Institut obshchey i neorganicheskoy  
khimii AN BSSR.

(Paper—Spectra)

YERMOLENKO, I. M. [Iarmolenka, I. M.]; POTAPOVICH, A. K. [Potapovich, A. K.]; MAKATUN, V. N. [Makatun, V. N.]

Use of spectroscopic methods in studying electron paramagnetic resonance and gamma-irradiated cellulose materials.  
Vestsi AN BSSR, Ser. fis.-tekh. nav. no.1:65-71 '63.  
(MIRA 16:4)

(Paramagnetic resonance and relaxation)  
(Cellulose) (Spectrum analysis)

KAPUTSKIY, F.N.; PAVLYUCHENKO, M.M.; YERMOLENKO, I.M.

Effect of the nature of solvent on the reaction of cellulose  
with nitrogen dioxide. Vysokom.sped. 5 no.1:75-78 Ja '63.  
(MIRA 16:1)

1. Belorusskiy gosudarstvennyy universitet im. V.I.Lenina i  
Institut obshchey i neorganicheskoy khimii AN Belorusskoy SSR.  
(Cellulose) (Nitrogen oxide) (Solvents)

MAKATUN, V.N.; POTAPOVICH, A.K.; YERMOLENKO, I.N.

Long-lived radicals formed in the  $\gamma$ -irradiation of cellulose.  
Vysokom.sped. 5 no.3:467-468 Mr '63. (MIRA 16:3)  
(Radicals (Chemistry)) (Cellulose) (Radiation)

GAVRILOV, M.Z.; YERMOLENKO, I.N.

Diffuse reflection spectra of the products of thermal aging of  
modified cellulose determining their yellowing. Dokl. AN BSSR  
7 no.9:606-609 S '63. (MIRA 17:1)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.  
Predstavleno akademikom AN BSSR M.M. Pavlyuchenko.

YERMOLENKO, I.N.; CHIRKOVA, G.N.

Quantitative microdetermination of carboxyl groups in cellulosic materials by the luminescent method. Zhur. anal. khim. 18 no.8: 994-998 Ag '63. (MIRA 16:12)

1. Institute of General and Inorganic Chemistry, Academy of Sciences, Byelorussian S.S.R., Minsk.

GAVRILOV, M.Z.; YERMOLENKO, I.N. (Minsk)

Diffuse reflection spectrophotometry used for investigating  
the sorption of dyes by fibrous cellulose materials. Zhur.  
fiz. khim. 37 no.11:2491-2495 N°63. (MIRA 17:2)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.

BUGLOV, Ye.D. [Bahlou, I.A.D.]; CHIRKOVA, G.N. [Chyrkova, H.M.]; VERMOLENIKO,  
I.N. [IArmolenka, I.M.]; STAKHOVSKIY, Ye.V. [Stakhouski, E.V.].

Biological properties of preparations obtained on the basis of  
oxycellulose. Vestsi AN BSSR Ser. fiz.-tekh. nav. no.1:55-60  
164. (MIRA 17:7)

KLIZAVZUNIK, I.A.; PRISTUPA, Ch.V.; KAPITSKIY, F.M.; YERIN-LENKO, I.N.  
[Zerolenko, I.N.]

Experimental study of carboxymethylcellulose. Vestsi AN  
BSSR. Ser. biol. nav. no.1:193-194 '84. (MIRA 17:6)

YELINA, G.I.; GUSEV, S.S.; YERMOLENKO, I.N.

Preparation and spectral study of partially acetylated  
carboxyl-containing cellulose. Dokl. AN BSSR 8 no.2:104-107  
F '64. (MIRA 17:8)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.  
Predstavleno akademikom AN BSSR M.M. Pavlyuchenko.

LONGIN, M.L.; KLIMENKO, A.B.; YERMOLENKO, I.N.

Electrochromatographic separation of amino acids using ion exchange  
analytic paper made of oxidized cellulose. Vestn. AN BSSR. Ser. fiz.-  
tekh. nav. no.2:136-137 '64. (MIRA 18:1)

YERMOLENKO, I.N. [Iarmolenka, I.M.]

Interpretation of the infrared spectra of cellulose and its  
derivatives. Vestoi AN BSSR. Ser. fiz.-tekhn. nav. no. 3:63-  
74 '64. (MIRA 18:2)

GUSEV, S.S.; YERMOLENKO, I.N.

Nitrogen-containing functional groups of monocarboxylcellulose  
according to infrared spectrum data. Dokl. AN BSSR 8 no.8:516-  
518 Ag '64. (MIRA 17:11)

1. Institut obshchey i neorganicheskoy khimii AN BSSR. Predstavlena  
akademikom AN BSSR M.M. Pavlyuchenko.

ACCESSION NR: AP4020969

S/0051/64/016/003/0630/0531

AUTHOR: Yermolenko, I.N.; Gavrilov, M.Z.

TITLE: Influence of light scattered by an SF-4 spectrophotometer on the results of optical density measurements in the short wavelength ultraviolet

SOURCE: Optika i spektroskopiya, v.10, no.3, 1964, 530-531

TOPIC TAGS: SF-4 spectrophotometer, scattering in spectrophotometer, ultraviolet absorption measurement

ABSTRACT: For accurate spectrophotometric measurements it is essential to allow for scattering and there have been many studies devoted to evaluation of scattering. The present paper gives the results of investigation of the effect of scattering on the optical density as measured by an SF-4 spectrophotometer in the 200-220 mμ region with different sources (a German D<sub>2</sub>-0.3 deuterium tube and a VSFU-3 hydrogen discharge tube) and different radiation detectors (FEU-39 photomultiplier with quartz windows), an STsV-6 photocell, and an FEU-18 photomultiplier with Uviol windows. The absorber was a water solution of ethyl alcohol, taken in sufficient thickness to absorb completely the radiation in the chosen narrow line. The results are

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ACCESSION NR: AF4020969

presented in the form of a number of curves. It is emphasized that the reported data apply only to the given spectrometer, and sources and detectors; in fact, for results of highest accuracy analogous measurements should be performed with the specific substance being investigated. Orig.art.has: 1 figure.

ASSOCIATION: none

SUBMITTED: 13May63

DATE ACQ: 02Apr64

ENCL: 00

SUB CODE: PH,SD

NR REF SOV: 001

OTHER: 002

Card 2/3

GUSEV, S.S.; YERMOLENKO, I.N.

Absorption spectra of celluloses containing acetyl and carboxyl groups  
in the regions 1500-1800  $\text{cm}^{-1}$  and 3000-3600  $\text{cm}^{-1}$ . Zhur. prikl. spektr.  
2 no.5:429-433 My '65. (MIRA 18:7)

GAVRILOV, M.Z.; YERMOLENKO, I.N.; YELINA, G.I.

Ultraviolet absorption spectra of acetyl cellulose. Opt. i  
spektr. 18 no.3:515-517 Mr '65. (MIRA 18:5)

YERMOLENKO, I.N.; LONGIN, M.L.; GAVRILOV, M.Z.

Concentration of metal traces on a ion-exchange paper with their  
subsequent determination. Trudy Kon. anal. khim. 15:353-357 '65.  
(MIRA 18:7)

YERMAKOV, I.N.; SAVASTENKO, G.N.

Microgram determination of carbonyl groups in cellulosic materials  
by means of p-nitrophenylhydrazine from diffuse reflection spectra.  
Zhur. anal. khim. 21 no. 1:98-102 '66 (MTRM 19:1)

1. Institut obshchey i neorganicheskoy khimii AN BSSR, Minsk.

L 40006-66 EWP(j)/EWT(m)/T RM/WW/JWD

ACC NR: AP6008277

SOURCE CODE: UR/0080/66/039/002/0458/0460

AUTHOR: Yermolenko, I. M.; Gusev, S. S.; Kaputakiy, F. M.; Vasilenko, Z. I.

53  
51  
B

ORG: none

TITLE: Infrared spectra of partially substituted nitroesters of polyanhydroureanic acid

SOURCE: Zhurnal prikladnoy khimii, v. 39, no. 2, 1966, 458-460

TOPIC TAGS: IR spectroscopy, cellulose, esterification, absorption spectrum

ABSTRACT: The use of spectral methods to determine the position of substitutes in cellulose derivatives was studied. For the experiments, purified cotton cellulose and monocarboxyl cellulose containing 4.7 and 7% COOH groups were used. The nitro groups were introduced at 20° with concentrated H<sub>2</sub>SO<sub>4</sub> and HNO<sub>3</sub> in the ratio 3:1, and with H<sub>2</sub>SO<sub>4</sub>+HNO<sub>3</sub> diluted with H<sub>2</sub>O in the ratio 38:32:30. Spectra were taken in the 400-3600 cm<sup>-1</sup> region. Infrared spectra of cellulose after esterification with diluted nitration mixture have weak bands at 900, 1630 (NO<sub>2</sub>) and 1725 (CO)cm<sup>-1</sup>; this indicates slight accumulation of nitro groups in cellulose. Accumulation of NO<sub>2</sub> groups in monocarboxylic cellulose containing 4.7 and 7% COOH groups is less than in nitrated cellulose, which indicates that in the reaction with HNO<sub>3</sub>, cellulose is more active than monocarboxylic cellulose. Esterification of cellulose with concentrated nitration

Card 1/2

UDC: 543.422+661.728.

L 40006-66

ACC NR: AP6008277

2

mixture changes the character of the absorption spectrum: characteristic bands for the high substituted esters of cellulose appear in the 685, 782, 860  $\text{cm}^{-1}$  regions. This change signals the transformation of cellulose into nitrocellulose. Orig. art. has: 2 figures.

||

SUB CODE: 07/ SUBM DATE: 22Apr64/ ORIG REF: 007

Card 2/2

YERMOLENKO, I.N.; KHODYKO, V.V.

Infrared spectra of diffusion reflection of cellulose materials.  
Dokl. AN BSSR 8 no.10:647-649 0 '64. (MIRA 18:3)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.

YERMOLENKO, I.N. [Iarmolenka, I.M.]; MAKATUN, V.N.; GUSEV, S.S., Gusev, S.S.]

Study of the conditions of the synthesis of monocarboxylcellobiose with  
the purpose of selecting an efficient flowsheet for its production.  
Vestsi AN BSSR. Ser. fiz.-tekh. nav. no.2:52-60 '62. (MIRA 16:4)

YERMOLENOV, I.V., machinist.

Methods of working with the SE-3 excavator. Mats. i izobr. predl. v  
stroi. no.112:3-5 '55. (MIRA 9:6)  
(Excavating machinery)

YEMOLENKO, I.V., machinist.

Methods of working with the MBh-1 walking excavator. Mats. i  
izobr. predl. v stroi. no. 112:6-7 '55. (MIRA 9:6)  
(Excavating machinery)

KUPRIYANOVA, A.I.; OMEL'CHENKO, A.D., i.o. Glavnogo metodista; YERMOLENKO, I.V.; POSELOVA, L.P.; ZHURAVLEV, N.M.; GRIGOR'YEV, V.V., otvetstvennyy redaktor; BEDNARSKAYA, G.A., redaktor; PAVLOVA, M.M., tekhnicheskiiy redaktor

[The "Volga Valley" pavilion; a guidebook] Pavil'on "Povolzh'e; puteveditel'. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 29 p.  
(MIRA 9:12)

1. Moscow. Vsesoyuznaya sel'skokhozyaystvennaya vystavka, 1954-
2. Direktor pavil'ona (for Zhuravlev)  
(Volga Valley--Agriculture)  
(Moscow--Agricultural exhibitions)

USSR / General Biology. Cytology. General Cytology. B

Abs Jour : Ref Zhur - Biologiya, No 4, 1959, No. 14289

Author : Yermolenko, L. M.

Inst : Not given

Title : The Nucleic and Carbohydrate Metabolism in  
the Process of Cell Division

Orig Pub : Byul. eksperim. biol. i med., 1957, 44, No 12,  
102-107

Abstract : The object of investigation is the corneal  
epithelium of mice. The introduction of  
dinitrophenol in drops into the right eye  
1-1½ hours before the animals were killed,  
decreased the mitosis activity by 31 percent  
and increased the amount of prophase in the  
epithelium of the eye as compared to the

Card 1/4 *Chair of Histology, Khabarovsk Med Inst.*  
6

USSR / General Biology. Cytology. General Cytology. B

Abs Jour : Ref Zhur - Biologiya, No 4, 1959, No. 14289

control left eye. When adeninesulfate (in 7-8 mg doses) was intraperitoneally introduced 12 hours before the animals were killed, MA decreased by 18 times. A hypodermic injection of tripoflavin 3 hours before the animals were killed, decreased MA and increased the amount of prophase in the epithelium of the cornea, the intestine and the tongue. The same effect was observed in the cornea when tripoflavin was administered locally. The author arrives at the conclusion that a disturbance of the nucleic metabolism leads to the inhibition of MA or the delay of mitosis at the prophase stage; MA in the epithelium of the skin, tongue

Card 2/4

USSR / General Biology. Cytology. General Cytology.

B

Abs Jour : Ref Zhur - Biologiya, No 4, 1959, No. 14289

and the cornea was not affected by a hypodermic administration of glucose, starch, insulin, or triprotamine zinc insulin. Analogous results were obtained in experiments with rats, in whom alloxane diabetes was produced. A parallel relationship between the daily rhythm of mitoses in the indicated organs and the content of sugar in the blood was not found to exist in the rats. Also, an introduction of NaF and malonates into the conjunctival sac  $1\frac{1}{2}$  hours before the animals were killed, did not reflect upon the tempo of the cell division in the epithelium of the cornea. The author concludes that the carbohydrate metabolism is of a secondary

Card 3/4

USSR / General Biology. Cytology. General Cytology. B

Abs Jour : Ref Zhur - Biologiya, No 4, 1959, No. 14289

significance in the preparation of the cell  
for division. -- I. M. Shapiro

Card 4/4

YERMOLEIKO, L. M. Cand Med Sci -- (diss) "The Role of  
Carbohydrate and Nucleic Metabolism in the Process of the Mitotic  
Division of Cells," Khabarovsk, 1958, 16 pp, 200 copies (Khabarovsk  
State Medical Institute) (KL, 46/60, 127)

USSR / Cultivated Plants. Grains. Legumes. Tropical M-1  
Cereals.

Abs Jour : Ref Zhur - Biologiya, No 2, 1959, No. 6257

Author : Sin'kovskiy, L. P.; Voznesenskiy, K. N.;  
Yermolenko, M. A.

Inst : Animal Husbandry Institute, Tadzh SSR

Title : Sorghum on the Tadzhikistan Non-Irrigated Land

Orig Pub : S.-kh. Tadzhikistana, 1957, No 7, 24-28

Abstract : The Institute of Animal Husbandry, TadzhSSR, carried out experiments in 1952 and 1953 on the sowing of sorghum on unirrigated land in the driest regions of the republic. Early Gaolyan 178 variety produced 34.3 and 26.5 cwt/ha of hay. The vegetation period before ripening lasted only 66 days. Sowing was done on March 20th, sprouts appeared on April 2nd;

Card 1/3

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USSR / Cultivated Plants. Grains. Legumes. Tropical M-1  
Cereals.

Abs Jour : Ref Zhur - Biologiya, No 2, 1959, No. 6257

seeds ripened on June 7th. Experiments conducted in subsequent years showed that in the case of fall plowing, when the sowing takes place at the end of March - beginning of April with a distance between rows of 60 cm, and when the norm of sowing is 6 - 7 kg/ha, the early sorghum varieties produce good crops of green mass and hay on these unirrigated plots. Late ripening varieties are not suitable there, because their racemes dry up and do not produce seeds. Corn cannot grow under these conditions (absence of moisture). Sorghum gives high yields of green mass and of silage, if the soil is watered. It gives an aftermath which is equal in productivity to the first mowing, it is mowed for

Card 2/3

USSR / Cultivated Plants. Grains. Legumes. Tropical M-1  
Cereals.

Abs Jour : Ref Zhur - Biologiya, No 2, 1959, No. 6257

the first time in the period when panicles appear. The first mowing (August 9th) on watered soil produced 406.7 cwt/ha of green mass in 1956 in the Gissar Valley, kolkhoz im. Stalin. After the second mowing October 9th the yield was 424.3 cwt/ha. When the soil is watered, it is possible to have two harvests during the vegetation period. A high sugar content in the stalks of sorghum makes it an excellent raw material for silo. It can be utilized as a component for ensilage for crops, which do not lend themselves readily to ensilage. -- N. N. Kuleshov

Card 3/3

35

YEMOLENKO, M.F. [Iarmolenka, M.F.]; NOVIKOVA, Ye. [Novikava, E.]

Outstanding chemist; on the 60th birthday of M.F. Iarmolenka. Vestsni  
AN BSSR, Ser. fis.-tekhn. no.1:137-141 '60. (MIRA 13:6)  
(Iarmolenko, Mikalai Fiodaravich, 1900-)

YERMOLENKO, M. I.

Provetrivaniye Rudnikov. (Mine Ventilation) Moskva, Metallurgizdat, 1950.

239 P. Illus.; Diagrms.; Tables. "Literatura": P. (240).

Calculation and designing of "Artificial Ventilation". Directives on the Selection of Rational Systems of Ventilation and its Equipment, Ventilation Control in Mines, etc. A reference Book for Students, Engineers and Technicians, in the Mining Industry.

OSTHOUSHKO, Ivan Antonovich; YERMOLENKO, M.I., red.; PARISHVSKIY, V.N.,  
red.isd-va; KLEYMAN, M.R., tekhn.red.

[Charging bore and blast holes by means of compressed air]  
Pnevmaticheskoe sariashanie shpurov i skvashin. Moskva, Gos.  
nauchno-tekhn.isd-vo lit-ry po chernoi i tsvetnoi metallurgii.  
1958. 43 p. (MIRA 11:12)  
(Blasting--Equipment and supplies)

SMOLDYRMV, Anatoliy Yevtikheyevich; YERMOLENKO, M.I., red.; AVSHYENOK,  
A.P., red.isd-va; VAYNSHTAYN, Ye.B., tekhn.red.

[Haulage by pipelines in mining] Truboprovodnyi transport  
v gornoi promyshlennosti. Moskva, Gos.nauchno-tekhn.isd-vo  
lit-ry po chernoi i tsvetnoi metallurgii, 1959. 503 p.  
(MIRA 12:8)

(Mine haulage) (Pneumatic tube transportation)  
(Hydraulic mining)

BORISENKO, Sergey Grigor'yevich; KOPITSA, Fedor Andreyevich. Prinimeli uchastiye: KULIKOV, V.V.; YARMENKO, D.M.. BUNIN, A.I., inzh., retsenzent; POLISHCHUK, A.D., kand.tekhn.nauk, retsenzent; YERMOLENKO, M.I., otv.red.; SIPIAGINA, Z.A., red.isd-va; SABITOV, A., tekhn.red.

[Chamber and pillar system of ore mining] Kamernaya sistema razrabotki v gornorudnoi promyshlennosti. Moskva, Gos.nauchno-tekhn.isd-vo lit-ry po gornomu delu, 1960. 399 p. (MIRA 13:5)  
(Mining engineering)

YERMOLENKO, M.I.; SUKHANOV, A.P.; KUTUZOV, B.M.; REMENNIK, L.M.

The most important problems facing the roller bit drilling of  
boreholes in strip mining. Gor. zhur. no.9:50 S '65. (MIRA 18:9)

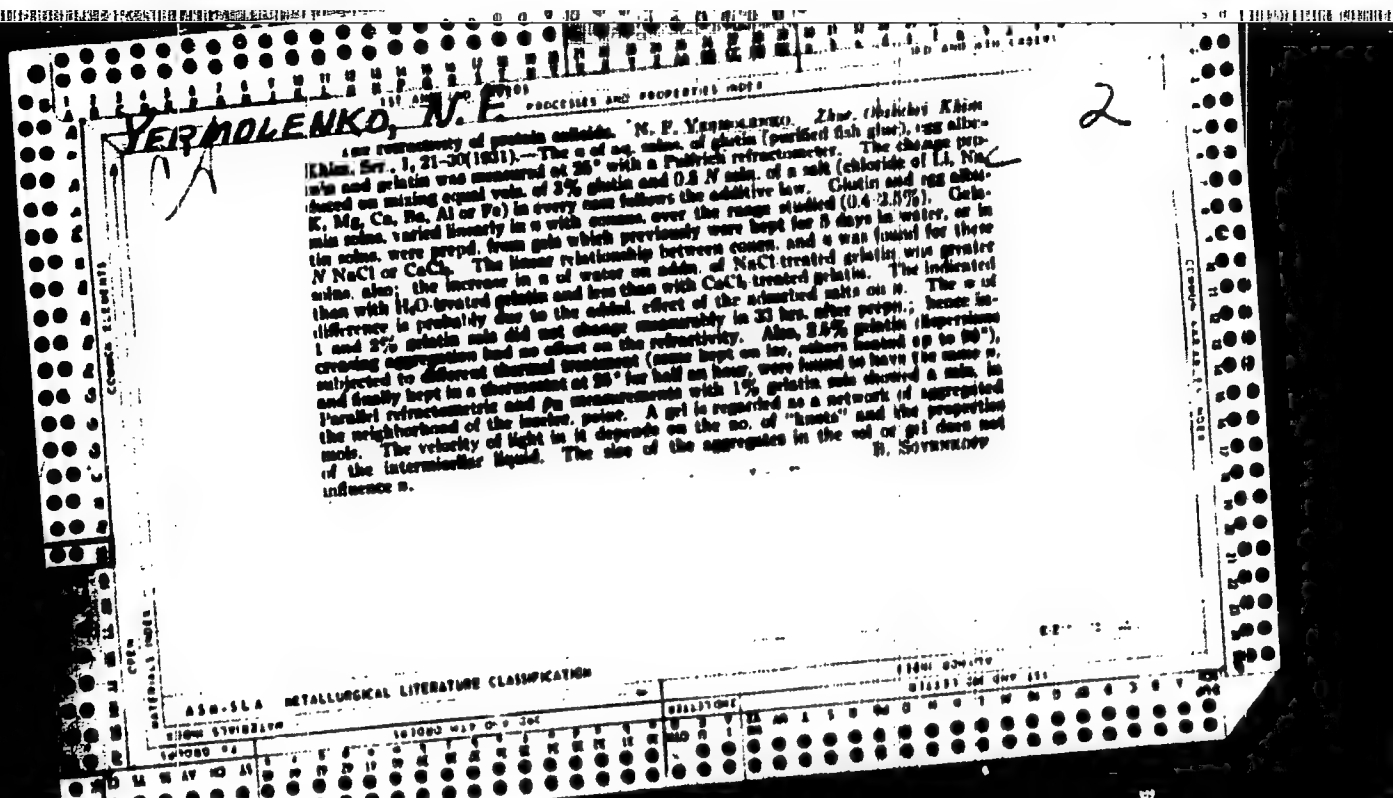


YERMOLENKO, Mariya Nikitichna [Iarmolenka, M.M.]; TARKAYLA, I.,  
red.; ZUYKOVA, V., tekhn. red.

[Ways for reducing costs in the production of meat and milk]  
Shliakhi znizhennia zatrat na vytvorohasts' miase i malaka.  
Minsk, Dziarzh.vyd-va sel'skahaopadar. lit-ry BSSR, 1961. 62 p.  
(MIRA 15:1)

(Meat—Costs)

(Milk—Costs)





*co*

2

Catalytic decomposition of hydrogen peroxide by clay suspensions. M. P. Kozlovskaya, E. N. Novikova and V. Ya. Gosterman. *Dokl. Akad. Nauk. SSSR*, 1964, 157, 112-113 (1964); cf. C. A. B. 59, 21804. The adsorption and catalytic activities of air-dried, calcined (at 120-700°C) and water- and acid-activated clay suspensions of 0.35-0.5 mm. were studied. No strict relation between adsorption and catalytic effect was observed. Clays having a high adsorption value are very weak catalysts, while those of medium adsorption are good catalysts. Clays containing Fe<sup>2+</sup> act best upon H<sub>2</sub>O<sub>2</sub>. The catalytic activity falls with rise in temp. of calcination, especially above 400°C. B. Z. Kamich

*ca*

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Adsorption activity of peat and coals. H. F. Kozlovskiy  
and D. Z. Gindarov. *Sbornik Akad. Nauk, Ind.  
Khim., Sverdlov Poly.*, 8, 169-64(1964). The adsorption  
activity of peat, brown and anthracite coals, and coke of  
0.30-0.5 mm. was studied, with solns. of I<sub>2</sub> in KI and with  
coke gas. The sample (1 g.) was shaken in a closed  
250 ml. round-bottom flask at rt. or above, allowed to stand  
for 4 hr. and its concn. checked again and filtered. The first  
portion of filtrate was discarded, but the remainder was  
used for titration. Adsorption follows  $a/m = EC \cdot X$ . A  
decrease in the following order: peat > brown coal >  
anthracite. Differences between actual and theoretical  
results fall within the exp't. errors. B. Z. Kamich

000-000 METALLURGICAL LITERATURE CLASSIFICATION

000H DIVISION

000H AND ONLY 101

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| <p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p>   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <p>PROCESSES AND PROCEDURES</p>  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| <p>The constitution of alloys and their microstructure after hardening in liquid air. N. F. Barmakova, <i>Doklady Akad. Nauk, Inst. Khim. (Moscow) Publ.</i> 1, 313 (1934).—Fe-Ni alloys of various composition, were studied after hardening in liquid air. Alloys of 31.7–32.2% Ni show a martensitic-austenite structure. The most pronounced microstructure is shown by alloys of 24.5% Ni and the least by 20% Ni. Cementation was carried out with charcoal and CO. For alloys containing over 22.10% Ni, cementation does not occur. When treated with 5% HNO<sub>3</sub> soln. in EtOH, the alloys of 22.5 and 32.16% Ni showed chiefly martensite and austenite, resp. Those of 24.5 and 28.0% Ni showed mixed austenite-martensite. H. Z. Karickhoff</p> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <p>ASR-55A METALLURGICAL LITERATURE CLASSIFICATION</p>   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p>   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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| 1ST AND 2ND DODERS  |  | PROCESSING AND PROPERTIES INDEX |  |
| <p>CA</p>   |  | <p>2</p>                        |  |
| <p>The law of precipitation in the precipitation of metal oxides. N. M. Kuznetsov. (U. S. S. R.) I, 118-97(1986).—Data are given on the precipitation of CuO by HCl, and of MnO, Fe<sub>2</sub>O<sub>3</sub>, and PbO by HCl and HNO<sub>3</sub>. During the suspending process thixotropism of the metal oxides was observed. Fe<sub>2</sub>O<sub>3</sub> is more strongly deposited after preliminary treatment of the oxide by acid to remove traces of electrolytes. All the oxides obey the Ostwald solid-phase rule. V. H. Matheson</p> |  |                                 |  |
| ASAC-11A METALLURGICAL LITERATURE CLASSIFICATION  |  | CLASSIFICATION                  |  |
| 107307 48   |  | 107307 48                       |  |
| 107307 48   |  | 107307 48                       |  |

20

Investigating new kinds of froth formers [for concrete].  
 N. F. Ermakova and N. A. Abramovich. *Soviet  
 Khimist*, 1965, No. 9, 38-41. Summary of surface-active  
 animal and vegetable albuminous materials (hide and  
 lupine albumin, turpentine by-product emuls. ext. from  
 sawed) give a froth that is stable on the boundary sur-  
 faces of 3 phases, air, water soln., cement. The highest  
 stability of the froth is found in a medium of  $pH$  greater  
 than 7. The physicochemical consists. of froth concretes  
 obtained are in accordance with standard values. The  
 rapidity of setting of cement is higher than that of the  
 destruction of the froths investigated. M. K. S.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

| SUBJECT |  |  |  |  |  |  |  |  |  | SUBJECT |  |  |  |  |  |  |  |  |  | SUBJECT |  |  |  |  |  |  |  |  |  | SUBJECT |  |  |  |  |  |  |  |  |  |
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*CA*

The Traube adsorption law and its applicability to briquetted native charcoal. N. Kravchenko and K. Muzinauer. *Colloid J.* (U. S. S. R.) 7, 81-3(1965).—On briquetted peat cokes activated by CO<sub>2</sub> at 85° obeys Traube's law for the adsorption of formic, acetic, lactic, butyric and isovaleric acids. Briquetted cokes were first washed with HNO<sub>3</sub>. The activity of these cokes falls with the pressure of briquetting to almost 80% at 510 atm. for formic acid but only to 84% for isovaleric acid. On briquetting, the micro and ultramicro pores are destroyed but those on which larger molecules are adsorbed remain unchanged.  
F. H. Rathmann

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

**Dilatant properties of adsorbents and their effect on adsorption by mineral compositions.** N. J. Kurnakova and R. N. Novikova. *Colloid J. (U. S. S. R.)* 2, 179-81 (1940).—The adsorption of bromine and picric acids and of methylene blue on charcoal and various types of clays (on linear function of the dilute const. of the adsorbent used for a homologous series of ads. (Me, Et, *n*-Pr, *iso*-Pr, *iso*-Am alcs.) and a reciprocal function of their mol. polarizabilities and refractions. For the adsorbents of different classes,  $H_2O$ ,  $Me_2CO$ ,  $H_2O$ ,  $C_6H_6$ ,  $CHCl_3$ ,  $CCl_4$ , benzene, no simple relation exists between the adsorption and the dilute const. For all the adsorbents used the relative adsorptive capacities are proportional to the catalytic activity for  $H_2O$  decompos. For vapors of the adsorbents used the adsorbed vol. per unit mass of adsorbent is nearly const. for various vapors on a given adsorbent. The values of  $a/s = M'$  ( $a$  = wt. of vapor adsorbed,  $s$  = d. of liquid layer) for the previously named adsorbents are: on tripoli, 0.24 ± 0.06; on banded clay, 0.17 ± 0.03; on ferrous clay, 0.17 ± 0.03; on alluvial clay, 0.10 ± 0.03; and on animal charcoal 0.37 ± 0.09. F. W. Rothman

|   |  |                              |  |
|---|--|------------------------------|--|
| COMMON SUBJECT  |  | PROCESSING AND PROPERTY MARK |  |
| <p><i>ca</i></p> <p><b>SURFACE SALTING OUT OF SURFACE-ACTIVE SUBSTANCES BY ELECTROLYTES AND STABILITY OF THEIR FOAMS. N. K. Ermolenko and N.A. Abramchuk. J. Phys. Chem. (U.S.S.R.) 6, 587-96 (1936). -- Data are given on the stability of various salt sols. With tannery proteins at temp. from 20° to 60°. As the KClS concn. increases, the stability of the films decreases. A max. Stabilizing effect is shown by Fe salts owing to coagulation of the surface protein layer and the opposite charge of the Fe (OH)<sub>3</sub> sol formed.</b></p> <p>F.H. Rathmann</p> |  |                              |  |
| <p>ASIS-ILA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>BOOK NUMBER</p> <p>ISSUED BY</p> <p>DATE</p> <p>CLASSIFICATION</p> <p>REMARKS</p>  |  |                              |  |

1ST AND 2ND ORDER

PROCESSES AND PROPERTIES INDEX

1ST AND 2ND ORDER

ca

SMALL WORKS.

Filtration as a method of judging adsorbents. N. A. Fimushenko. *Trudy Vsesoyuznogo Nauchno-Issledovatskogo Instituta Khimicheskoy Fiziki i Mekhaniki* No. 3, 3-17 (1934).--The speed of filtration can be used to det. the adsorbent properties of clays. The effect of temp. was also studied. It was found that for calcined (at 120-700°) clays, the adsorption and absorption follow different laws. With increase in temp. of calcination, the adsorption passes through a max., while the filtration speed continuously grows. H. Z. Kamich

ADDITIONAL METALLURGICAL LITERATURE CLASSIFICATION

FROM STUDYING

FROM WORKING

**Absorption of acids of the aliphatic series by briquetted peat.** N. Kruzhakov, P. Gerasimov and L. Naibinich. *Kolloid. Zh.* (USSR) 3, 297-301 (1957). Acids from formic to valeric are adsorbed by briquetted peats according to Traube's rule, and the adsorptive capacity of the peat rises (up to 300 atm. pressure and then falls). The cementing substances used, iron hydroxides or peat tars, did not change the quality of the briquettes. F. H. Naibinich

| 1ST AND 2ND ORDERS   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3RD AND 4TH ORDERS        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| PROCESSES AND PROPERTIES INDEX   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1ST AND 2ND ORDERS        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <p><i>ca</i></p> <p><b>The swelling of rubber in mixed solvents. N. H. Hines, J. S. Enko and R. Tairline. <i>Colloid (U. S. S. R.)</i> 9, 835-85 (1967).--With increasing vol. polarization, the swelling curve falls, especially in solvents consisting of a polar and a nonpolar solvent. The heat of swelling always (except for <math>\text{PhNO}_2</math>) decreases with increase in the dielec. const. Data are given for <math>\text{CHCl}_3</math>, <math>\text{CCl}_4</math>, <math>\text{C}_6\text{H}_6</math>, <math>\text{C}_6\text{H}_5\text{OH}</math>, <math>\text{Et}_2\text{O}</math>, <math>\text{Me}_2\text{CO}</math>, <math>\text{H}_2\text{O}</math> and <math>\text{PrOH}</math> mixts. F. H. Rothmann</b></p> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | <p><b>3-</b></p>          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | <p>1ST AND 2ND ORDERS</p> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

*CP*

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RELATIONSHIP BETWEEN ADSORPTION, SOLUBILITY AND SOLVENT  
POLAR PROPERTIES. N. F. KRYUKOV and U. Z. GINSBURG.  
Colloid J. (U. S. S. R.) 9, 521-53 (1947). With anthra-  
nolic acid (A) the relations are quite complex. In sol-  
vents composed of 2 nonpolar components (C<sub>6</sub>H<sub>6</sub>-CCl<sub>4</sub>)  
or of 1 polar and 1 nonpolar component (Ethyl-CCl<sub>4</sub>)  
the adsorption (A) and solubility (L) of 1 vary inversely.  
In a pair of solvents like C<sub>6</sub>H<sub>6</sub>-Ethyl, similar in structure  
and close in the values of their polar constants, the changes  
in A and L are nearly parallel. The adsorption on the  
crust of 1 from mixed solvents composed of a polar and  
nonpolar component, the latter affecting the polarity of  
the first (EtOH-C<sub>6</sub>H<sub>6</sub>), passes through a min. L in such  
cases increases with increase in the amt. of polar compo-  
nent in the mixt. In a mixt. of 2 strongly polar solvents  
like EtOH-H<sub>2</sub>O and Me<sub>2</sub>CO-EtOH A and L vary inversely.  
John Livak

| PROCESSING AND PROPERTIES   |             |
|---|-------------|
| CA  | 14          |
| <p>The prevention of boiler scale by protective colloids<br/> N. P. Krutskaya and N. M. Zhuravskaya. <i>J. Appl. Chem. (U. S. S. R.)</i> 10, 2000-12 (in French 2012) (1957)<br/> Artificially prepd. waters of A.M-40.3 (German degree of hardness were used with colloids in 0.01, 0.05 and 0.2% concns. The antiscaling action decreases in the order: tannin, agar-agar, starch and gelatin. The mechanism is explained by the ability of the protective colloids to stabilize the ultramicrocrystals formed and to retain these crystals in soln. as colloids. Four references. A. A. P.</p> |             |
| <p>ASD-51A METALLURGICAL LITERATURE CLASSIFICATION</p>  |             |
| FROM 17000000   | TO 17000000 |
| SEARCHED  | INDEXED     |
| SERIALIZED  | FILED       |

The emulsifying capacity of some natural emulsifiers. N. F. Ermakova and V. Ye. Ostrovskaya. *Colloid J. (U. S. S. R.)*, 19, 50-51 (1957).—A study was made of the emulsifying action of bile on the systems  $C_{12}H_{25}H_{2}O$ , sunflower oil- $H_2O$ , fish oil- $H_2O$  and gasoline oil- $H_2O$ , also, of egg yolk on the system  $C_{12}H_{25}H_{2}O$ , at 15°. Bile and egg yolk proved to be strong emulsifiers, and in the case of bile, the greater the difference in polarity of the 2 emulsifiable liquids the greater the action. Shown references.

A. L. Minkov

METALLURGY:AL LITERATURE CLASSIFICATION

**CIA-RDP86-00513R001962820004-9"**

107 AND 108 000112

PROCESSING AND MONITORING INDEX

109 AND 110 000113

111 AND 112 000114

113 AND 114 000115

115 AND 116 000116

117 AND 118 000117

119 AND 120 000118

121 AND 122 000119

123 AND 124 000120

125 AND 126 000121

127 AND 128 000122

129 AND 130 000123

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| PROCESSING AND PROPERTY INDEX   |  |  |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |
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| 1ST AND 2ND ORDER   |  |  |  |  |  |  |  |  |  |  |  |  | 3RD AND 4TH ORDER |  |  |  |  |  |  |  |  |  |  |  |  |
| <p>Swelling of rubber. The dependence of the swelling of vulcanized rubber in mixed solvents on the temperature, and the temperature hysteresis of swelling. N. P. Kump, Ienko and S. A. Levina. <i>Caoutchouc and Rubber</i> (U. S. S. R.), 1960, No. 5, 16-21. Samples (4 cm. long, 1.5 mm. diam.) of vulcanized rubber were put in sealed glass tubes with 1 cc. of the following solvents (or mixt. of these solvents in different proportions): <math>\text{C}_6\text{H}_6</math>, <math>\text{CCl}_4</math>, <math>\text{PhMe}</math>, <math>\text{CHCl}_3</math>, <math>\text{PhNO}_2</math>, <math>\text{EtOH}</math>, <math>\text{Me}_2\text{CO}</math> and <math>\text{H}_2\text{O}</math>. The samples were kept for 20 hr. successively at 0°, 10°, 20°, 30°, 25°, 15° and 0°. The swelling was detd. by increase in length of the rubber. The results of the tests are recorded on graphs, which show that the degree of swelling of vulcanized rubber increases with temp. The curves representing the increase in length vs. temp. do not coincide when the temp. was raised and then lowered (for the same solvent), but form hysteresis loops. A. Peatou</p> |  |  |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |
| <p>ADD-51A METALLURGICAL LITERATURE CLASSIFICATION</p>  |  |  |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |

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11-2-81 8 54

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|--|--|-------------------|--|
| 187 AND 188 INDEX  |  | 189 AND 190 INDEX |  |
| PERIODICALS AND PROCEEDINGS INDEX  |  |                   |  |
| <p>Periodical contamination from solution during evaporation of the solvent. M. P. Samokhin and K. I. Hranov. <i>J. Phys. Chem.</i> (U. S. S. R.) 11, 188-89 (1958). Borax is deposited in rings from H<sub>2</sub>O and also. The distances between the rings increase with increasing surface tension of the solvent, with falling temp., falling concn. (down to 0.01%) and increasing bore of the capillary. This behavior agrees with the theory that the rings are produced because the concn. is increased by capillary forces on the first ring until the wt. of the suspended liquid becomes too large; then the liquid suddenly drops to a new level where the formation of a 2nd ring starts.</p> <p style="text-align: right;">W. C. P. A.</p> |  |                   |  |
| <p>ASS-11A METALLURGICAL LITERATURE CLASSIFICATION</p>   |  |                   |  |
| FROM SYNOPTIC  |  | FROM SYNOPTIC     |  |
| 100000 42  |  | 100000 42         |  |

| IT AND FIND SYSTEM  |  | PROCEDURES AND PROPERTIES INDEX |  |
|---|--|---------------------------------|--|
| <p><i>Co</i></p> <p>Importance of the purity of the adsorbent for the adsorption of substances by brignated mixed adsorbents. N. F. Babinovitch and L. I. Babinovitch. <i>Colloid J.</i> (U.S.S.R.) 11(1969); cf. C. A. 35, 16799. Filter paper treated with HCl, not was brignated and charred. The adsorption of water and by these brignated decreased when the brignating pressure increased from 100 to 1500 kg/cm<sup>2</sup>. The adsorption from various solvents in the systems H<sub>2</sub>O + CCl<sub>4</sub>, CCl<sub>4</sub>, CHCl<sub>3</sub> and H<sub>2</sub>O. In the system H<sub>2</sub>O + CCl<sub>4</sub> there was a min. of adsorption at 50% of CCl<sub>4</sub>, whereas there is no min. or max. in other systems.</p> <p>J. J. Babinovitch</p> |  | 2                               |  |
| <p>ADDITIONAL METALLURGICAL LITERATURE CLASSIFICATION</p> <p>10000 20 10000 H11 011 011</p>   |  |                                 |  |



| TITLE AND INFO SHEET  |  | PROCESSING AND PROPERTY SHEET |  |
|---|--|-------------------------------|--|
| <p>Co.</p> <p>Importance of the constitution of organic acids for their adsorption from mixed media. N. F. Brumbyak and D. Z. Ginzburg. <i>Colloid J.</i> (U. S. S. R.) 5, 263-70(1959); cf. C. A. B. 61127. Adsorption by wood charcoal from some organic solutions in the series AcOH, chloroacetic, dichloroacetic, trichloroacetic and valeric acid. For a given acid it increases from EtOH to C<sub>2</sub>H<sub>5</sub> and CCl<sub>4</sub>. The adsorption from mixed solvents EtOH + C<sub>2</sub>H<sub>5</sub> shows a min., whereas there is neither max. nor min. in the curve of adsorption from the mixts. CCl<sub>4</sub> + C<sub>2</sub>H<sub>5</sub> and H<sub>2</sub>O + HClOH. Valeric acid was also adsorbed from C<sub>2</sub>H<sub>5</sub> + C<sub>2</sub>H<sub>5</sub>O<sub>2</sub> (a min.), and m-sulfonbenzoic acid from H<sub>2</sub>O + HClOH mixts.</p> <p>J. J. Hirschman</p> |  | <p>2</p>                      |  |
| <p>ASAC-55A METALLURGICAL LITERATURE CLASSIFICATION</p>   |  |                               |  |
| <p>FROM STATION</p>   |  | <p>FROM COMPANY</p>           |  |
| <p>100000 HLF DIV 001</p>   |  | <p>0011000</p>                |  |
| <p>0011000</p>  |  | <p>0011000</p>                |  |



PERIODIC PRODUCTION FROM SOLUTION DURING COMPRESSION  
of the solvent. N. S. Krasnitskiy and H. A. Levin. J.  
Gen. Chem. (U. S. S. R.) 3, 968-70 (1968); cf. Krasnitskiy  
and Levin, C. A. B., 1969. Periodic spots, in  
general, are produced by salts and cry. acids. Besides the  
appearance of the spots, the dispersity of the particles  
is also affected, which affects the capillary properties, but an  
exact rule in periodic spots. However, the exact  
relation between the particles and their location is not  
yet known. A model consisting of a glass tube 8 mm. in  
diam. the lower surface of which is covered at each end  
with a porous plug, and the central part unobstructed, is  
proposed to explain the production of periodic spots, by  
change of the position of the porous plug during lowering or  
raising the level of the liquid, as it passes from the  
porous plug to the capillary and vice versa.

A. A. Padgugny

000.004 METALLURGICAL LITERATURE CLASSIFICATION

| PROCEDURE AND PROPERTIES INDEX                         |   |
|--|---|
| CP   | <p>The absorption of organic acids from single and mixed solvents. N. E. Spangberg and S. A. Levin. <i>Acta Physicochim. U. S. S. R.</i> 46:1-44 (1952) (in English).—In the mixed solvent systems: CCl<sub>4</sub>-C<sub>6</sub>H<sub>6</sub>, CCl<sub>4</sub>-PhMe (I), CCl<sub>4</sub>-PhMe (II), CCl<sub>4</sub>-CHCl<sub>3</sub>, CCl<sub>4</sub>-EtOH, CCl<sub>4</sub>-MeOH, CCl<sub>4</sub>-Me<sub>2</sub>CO (III), MeOH-H<sub>2</sub>O, Me<sub>2</sub>CO-H<sub>2</sub>O (IV), CHCl<sub>3</sub>-Me<sub>2</sub>CO, and CHCl<sub>3</sub>-MeOH, the absorption increases of acetyls and butyric acids on charcoal from their 0.000 <i>M</i> soln. as conc. temp. are previously the same from soln. of solute, of the acids as from soln. of the single acids alone. The kinetic rate (Dissociation, Leung 1952, 68), stronger absorption from a soln. of the acid more strongly absorbed separately, was constant. From mixed solvents of similar solubility as IV or of similar class, nature as II the total absorption was previously independent of the relative amounts of the solvents. From mixed solvents of the polar-nonpolar types I-III the absorption of acetyls acid from soln. increases with an increase in the concn. of the nonpolar component while for butyric acid other factors predominate. For pure solvents in a given homologous series, the absorption of the two acids increases with an increase in the dielectric const. or in the mol. polarizability. P. M. Barthman</p> |
| <p>AVG-51A METALLURGICAL LITERATURE CLASSIFICATION</p> |   |
| <p>100000 111 000 000</p>                              | <p>000000 000 000 000</p>   |
| <p>100000 111 000 000</p>                              | <p>000000 000 000 000</p>   |

YERMOLENKO,  
N.F.

| 1ST AND 2ND ORDERS  |  | PROCESSES AND PROPERTIES INDEX |  | 3RD AND 4TH ORDERS |  |
|---|--|--------------------------------|--|--------------------|--|
| <p><i>ca</i></p> <p><b>Kinetics of supplementary swelling of vulcanized rubber.</b><br/> N. F. Yermolenko, (Golen. J. U. S. R. D. O. 105 101 (1961)). Several samples of vulcanized rubber were kept in acetone for 4 days, then in <math>C_{12}H_{22}</math> for supplementary swelling. The velocity of supplementary swelling was detd. by methods previously described (C. J. 32, 1959). The observed velocity corresponded to a reaction of the 1st order, i. e., was analogous to the initial swelling. However, this velocity decreased in time. This decrease is explained by the presence of 2 simultaneous processes during supplementary swelling: (1) chem. solution (high velocity const.) and (2) osmotic "binding" of the liquid (low velocity const.). Each process has its own equil., which is established at different times. Therefore, the av. velocity (observed velocity of supplementary swelling) should decrease in time. The velocity const. depended on the polarity of the liquid which was used for preliminary swelling, on the polarity of the liquid for the supplementary swelling, and to a lesser degree on the compn. of the rubber.</p> <p style="text-align: right;">A. A. Peshkov</p> |  |                                |  |                    |  |
| <p>ASH-55A METALLURGICAL LITERATURE CLASSIFICATION</p>  |  |                                |  |                    |  |
| <p>EDW. STUBBS</p>  |  |                                |  |                    |  |
| <p>EDW. STUBBS</p>  |  |                                |  |                    |  |

ERMOLENKO, N. F.

PHYSICAL AND CHEMICAL PROPERTIES  
Adsorption of picric acid on silica gel from mixed organic

media. N. F. Ermolenko and T. M. Avdeyeva. *Colloid J*  
 (U. S. S. R.) 6, 881-8 (1940); cf. C. A. 33, 84001.  
 Adsorption of picric acid with silica gel from  $\text{CCl}_4$ - $\text{C}_6\text{H}_6$   
 mixt. increased with an increase of  $\text{CCl}_4$  concn., that from  
 $\text{CCl}_4$ -toluene was increased with a decrease of  $\text{CCl}_4$  concn.  
 But adsorption from the mixts.  $\text{C}_6\text{H}_6$ - $\text{CHCl}_3$  and  $\text{C}_6\text{H}_6$ -  
 $\text{EtOH}$  and  $\text{C}_6\text{H}_6$ - $\text{PhNO}_2$  passed through a min. when de-  
 creasing the  $\text{C}_6\text{H}_6$  concn. A. A. Podgorny.

2

CA

THEORY OF STABILIZATION OF THE DISPERSIONS OF GRAPHITE AND FULLERENE. N. N. Kuznetsov, R. N. Novikova, O. N. Pankov and K. A. Kuznetsov. *Colloid J. (U. S. S. R.)* 6, 607-614 (1964); *cf. C. A. B. 59, 7769; 51, 2415*.—Thixotropic transformation of suspensions of low concentration takes place not only in the presence of strong electrolytes but also in the presence of org. stabilizers that are used for the stabilization of graphite suspensions. In the latter case, an accelerated change in suspension viscosity is caused by the formation of an adsorption layer with the org. stabilizers on the surface of particles of graphite. This layer acts as a barrier layer preventing the particles from aggregating one another and keeping the suspensions in a stable state. All low-conc. suspensions that show the Ostwald rule for part., have the property of thixotropic transformation of the type of non-reversible rheology.

A. A. Fedorov.

ASB-55A METALLURGICAL LITERATURE CLASSIFICATION

BOOK DIVISION      SERIALS DIV      GOV. SEC.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100